APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,789	03/22/2004	Hai-Feng Wang	MS1-606USC1	2367

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LEE & HAYES PLLC
421 W RIVERSIDE AVENUE SUITE 500
SPOKANE, WA 99201

EXAMINER
SANDERS, AARON J

ART UNIT	PAPER NUMBER
2168	

MAIL DATE	DELIVERY MODE
12/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Interview Summary	10/806,789	WANG ET AL.
	Examiner	**Art Unit**	
	Aaron Sanders	2168	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Aaron Sanders*.

(3)*E. John Fain*.

(2) *S.R. Pannala*.

(4)_____.

Date of Interview: *13 December 2007*.

Type: a)☒ Telephonic   b)☐ Video Conference
        c)☐ Personal [copy given to: 1)☐ applicant   2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes   e)☒ No.
    If Yes, brief description: _____.

Claim(s) discussed: *37-41, 72 and 78*.

Identification of prior art discussed: *Bowman et al., U.S. 6,006,225*.

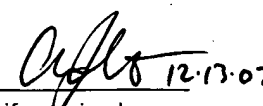Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *Applicant's representative gave a brief overview of claimed invention. The Examiner reiterated the objection to claims 38-41 as being improper in view of MPEP 608.01(n)(IV). Applicant's representative discussed how the proposed amendments to claims 37, 72, and 78 distinguished them over the prior art of reference. The Examiner pointed out that Figs. 8 and 9 should be in English since the application is for an American patent.*

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

SATHYANARAYAN PANNALA
PRIMARY EXAMINER

12-13-07

Examiner Note: You must sign this form unless it is an
Attachment to a signed Office action.

Examiner's signature, if required

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No. 10/806,789
Filing Date .... Mar 22, 2004
First Named Inventor .... Hai-Feng Wang
Assignee... Microsoft Corporation
Group Art Unit 2168
Examiner... Aaron J. Sanders
Attorney's Docket No.... MS1-0606USC1
Title .... Search Engine with Natural Language-Based Robust Parsing of User Query and Relevance Feedback Learning

INFORMAL COMMUNICATION IN PREPARATION FOR
SCHEDULING AN INTERVIEW

To: Examiner Sanders
        Fax: (571) 270-2016

From: E. John Fain
        Lee & Hayes, PLLC
        421 W. Riverside Avenue, Suite 500
        Spokane, WA 99201
        johnf@leehayes.com
        (Tel. 509-324-9256; Fax 509-323-8979)

Dear Examiner Sanders:

[0001]   This communication provides an agenda for a phone interview of this matter. My assistant will be contacting you to schedule an interview. If you would prefer to schedule the interview, then please contact my assistant or me directly. Our contact info is on the signature page of this document. Thank you in advance for talking with me about this matter.

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www.leehayes.com 509.324.9256

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Interview Agenda:

- Discussion about Claim Objections
- Discussion of proposed amendments
- Discussion of difference between claims and cited art;

Claim Objections

[0002]   The Office states (Action, p. 3) that dependent claims 38-41 are objected to because the examiner wants you to change "A method" to "The method" in a dependent claim. Applicant submits that the subject of each dependent claim is a separate claimed invention. Although a dependent claim refers back to a base claim to provide a base definition of the subject, the subject itself is fresh and new. The Applicant respectfully requests that the Examiner refer to MPEP 608.01(n) "Dependent Claims".

[0003]   With this clarification, the reasoning for the claim objections provided on p. 3 of the Action is no longer applicable. Right? If not, then please explain why not.

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Exemplary Differences

[0004]   I propose the following amendments to claim 37.

37. A method comprising:

receiving a query;

mapping the query from a query space to a question space to identify associated frequently asked questions (FAQ), the mapping comprises:

analyzing a log database to determine a relevance of previously stored frequently asked questions to the query, the analyzing comprises:

iteratively training a search engine using data in the log database, wherein the search engine comprises a query parser and a FAQ matcher;

deriving weighting factors based on the iterative training, wherein the weighting factors are used to determine the relevance;

identifying a confidence rating which measures a degree of the relevance between the previously stored frequently asked questions and the query; and

ascertaining from the previously stored frequently asked questions the associated frequently asked questions based on the determined relevance;

mapping the associated frequently asked questions from the question space to a template space to identify associated templates;

mapping the templates from the template space to an answer space to identify associated answers; and

returning the answers in response to the query.

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[0005]   The primary cited references (i.e., Warthen and Bowman) do not disclose the following (in particular, the emphasized text) from claim 37:

iteratively training a search engine using data in the log database, wherein the search engine comprises a query parser and a FAQ matcher;

deriving weighting factors based on the iterative training, wherein the weighting factors are used to determine the relevance;

identifying a confidence rating which measures a degree of the relevance between the previously stored frequently asked questions and the query;

[0006]   In the rejection to claim 37, the Examiner states that Warthen does not explicitly teach analyzing those logs to determine the relevance, and relies on Bowman for this claim element. However, Bowman does not teach or suggest that the analyzing comprises "*iteratively training a search engine using data in the log database*, wherein the search engine comprises a query parser and a FAQ matcher; *deriving weighting factors based on the iterative training*, wherein the weighting factors are used to determine the relevance; identifying a *confidence rating which measures a degree of the relevance between the previously stored frequently asked questions and the query*".

[0007]   Instead, Bowman discloses that related terms are generated using query term correlation data which reflects the *frequencies* with which specific terms have previously appeared within the same query (Bowman, Abstract). The query term correlation date is regenerated periodically from recent query submissions, such as by using the last M

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days of entries in a query log, and thus heavily reflects the current tastes of users. As a result, the <u>related terms suggested by the search engine tend to be terms that correspond to the most frequently searched items during the relevant time period</u>. (Bowman, ¶ 4, lines 23-29).

[0008]   I look forward to talking to you.

Respectfully Submitted,

Dated: <u>November 13, 2007</u>   By: _____
                                          E. John Fain
                                          Reg. No. 60960
                                          (509) 324-9256 x256
                                          johnf@leehayes.com
                                          www.leehayes.com

                                          My Assistant: Carly Bokarica
                                          (509) 324-9256 x264
                                          carly@leehayes.com

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Appendix of Claims with Proposed Amendments

1-36.   **(Canceled)**

37.   (Currently Amended) A method comprising:

receiving a query;

mapping the query from a query space to a question space to identify associated frequently asked questions (FAQ), the mapping comprises:

analyzing a log database to determine a relevance of previously stored frequently asked questions to the query, the analyzing comprises:

iteratively training a search engine using data in the log database, wherein the search engine comprises a query parser and a FAQ matcher;

deriving weighting factors based on the iterative training, wherein the weighting factors are used to determine the relevance;

identifying a confidence rating which measures a degree of the relevance between the previously stored frequently asked questions and the query; and

ascertaining from the previously stored frequently asked questions the associated frequently asked questions based on the determined relevance;

mapping the associated frequently asked questions from the question space to a template space to identify associated templates;

mapping the templates from the template space to an answer space to identify associated answers; and

returning the answers in response to the query.

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38.   (Previously Presented) A method as recited in claim 37, wherein the mapping from the query space to the question space comprises:

parsing the query to identify at least one associated concept; and

correlating the concept to one or more frequently asked questions.

39.   (Previously Presented) A method as recited in claim 37, wherein the mapping from the question space to the template space comprises cross-indexing from a first table containing question identifications to a second table containing

template identifications.

40.   (Previously Presented) A method as recited in claim 39, wherein the mapping from the template space to the answer space comprises cross-indexing from the second table to a third table containing answer identifications.

41.   (Previously Presented) A method as recited in claim 37, further comprising:

presenting the answers to a user for confirmation as to which of the answers represent the user's intentions in the query;

analyzing the query and the answers confirmed by the user; and

modifying the answers that are returned in response to the query based on information gleaned from the analyzing.

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42-71. (Canceled)

72.   (Previously Presented) A method of parsing a search query, comprising:

segmenting the search query into individual character strings, wherein at least one of the individual character strings comprises a single character;

producing a parse tree from at least one parsable character string of the search query; ~~and~~

generating at least one keyword based at least on one non-parsable character string of the search query ꓹ [[,]]

determining a relevance of the parse tree and the at least one keyword to a list of frequently asked questions (FAQ), wherein the relevance is determined by a FAQ matcher that has been iteratively trained using data from a log database; and

~~wherein~~ using the parse tree and the keyword ~~are used~~ to return answers to the search query.

73.   (Previously Amended) The method of claim 72, further comprising:

conducting keyword searching using the at least one keyword.

74.   (Previously Amended) The method of claim 72, wherein the parse tree represents a collection of concepts related to the search query.

75.   (Previously Amended) The method of claim 74, further comprising matching the parsed concepts to a list of frequently asked questions.

76.   (Previously Amended) The method of claim 75, further comprising:

identifying at least one answer associated with the list of frequently asked questions that match the parsed concepts and keywords; and

presenting the at least one answer to a user in a user interface that permits a user to select a desired answer from the one or more answers.

77.   (Previously Presented) The method of claim 76, further comprising:

logging the search query and at least one answer selected by the user in a log database; and

analyzing the log database to derive at least one weighting factor indicating how relevant the frequently asked questions are to the parsed concepts and keywords.

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78. **(Currently Amended)** A parser for a search engine, comprising:

a segmentation module that segments a search query into one or more individual character strings, wherein at least one of the one or more individual character strings comprises a single character;

a natural language parser module that produces a parse tree from one or more parsable character strings of the search query; ~~and~~

a keyword parser to identify one or more keywords in the search query and to output the keyword,

<u>a log analyzer able to derive, over time, various weights indicating how relevant the parse tree and the one or more keyword are to a list of frequently asked questions, wherein the various weights are determined based on iterative training using data from a log database;</u>

wherein the parse tree and the one or more keywords are used to return answers to the search query.

79. **(Previously Presented)** The parser of claim 78, wherein the parse tree represents a collection of concepts related to the search query.

80. **(Previously Presented)** The parser of claim 78, further comprising a search module that matches the parsed concepts to a list of frequently asked questions.

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81.   (Previously Presented) The parser of claim 80, wherein the search module:

identifies at least one answer associated with the list of frequently asked questions that match the parsed concepts and keywords; and

presents the at least one answer to a user in a user interface that permits a user to select a desired answer from the one or more answers.

82.   (Previously Presented) The parser of claim 81, wherein the search module:

logs the search query and at least one answer selected by the user in a log database; and
analyzes the log database to derive at least one weighting factor indicating how relevant the frequently asked questions are to the parsed concepts and keywords.